Space Weather Forecast

Issued on Friday, 22 September 2023 at 13:32 Local

This forecast provides a four day assessment of space weather events. The probabilities stated below are for reaching or exceeding the given levels. For more information about space weather impacts please see the Met Office Space Weather Scales https://www.metoffice.gov.uk/weather/learn-about/space-weather/uk-scales

---

Space Weather Forecast Headline: Isolated R1-R2 Minor/Moderate Radio Blackouts likely throughout. Chance of G1 minor geomagnetic storms 23 and 25 Sep.

Analysis of Space Weather Activity over past 24 hours
Solar Activity: There are 13 sunspots on the visible disc. Solar activity has been Moderate overall, with one Moderate flare from the large region in centre disc. A developing region in the northwest and a further region in the southeast are being monitored for further developments. The Moderate flare gave rise to a CME which is forecast to have an Earth-directed component. A further CME from centre disc early on 22 Sep will be analysed when further imagery becomes available.

Solar Wind / Geomagnetic Activity: Solar wind speeds have been mainly slightly elevated through the period, but with a declining trend. The total magnetic field strength was weak, with only weak variations in the important north-south component. Resultant geomagnetic activity was Quiet to Unsettled.

Energetic Particles / Solar Radiation: No solar radiation storms were observed.
Four-Day Space Weather Forecast Summary

Solar Activity: Solar activity is forecast to be at mainly Low to Moderate levels. The main risk of Moderate-class flares is from the large region close to east-centre disc and from a developing region in the northwest. These regions contain high magnetic complexity spots and are the main source of a risk of Strong solar activity.
Solar Wind / Geomagnetic Activity: CME arrivals are possible through much of the period, with the highest likelihood on 23 and 25 Sep. Fast solar winds could connect from late on 22 Sep and persist to the end of the period. Mainly Quiet geomagnetic activity at first, but with a risk of Unsettled to Active through much of the period and a risk of G1 minor storms, mainly on 23 and 25 Sep.
Energetic Particles / Solar Radiation: No solar radiation storms are expected, with only a slight chance of an enhancement should any larger flares occur.

Issued by Met Office Space Weather Advisor, Tel: +44 (0) 330 135 4254 Email: moswoc@metoffice.gov.uk

© Crown Copyright 2023. All Rights Reserved.

Met Office Space Weather Forecast

Geomagnetic Storms:

Geo-Magnetic Storm Probability (Exceedance)	Level	Past 24 Hours (Yes/No)	Day 1 (00-24 UTC) (%)	Day 2 (00-24 UTC) (%)	Day 3 (00-24 UTC) (%)	Day 4 (00-24 UTC) (%)
Minor or Moderate	G1 to G2	No	20	30	20	30
Strong	G3	No	1	5	1	1
Severe	G4	No	1	1	1	1
Extreme	G5	No	1	1	1	1

Radio Blackouts - X Ray Flares:

X Ray Flares Probability	Level	Past 24 Hours (Yes/No)	Day 1 (00-24 UTC) (%)	Day 2 (00-24 UTC) (%)	Day 3 (00-24 UTC) (%)	Day 4 (00-24 UTC) (%)
Active	R1-R2 M Class	Yes	60	60	60	60
Very Active	R3 to R5 X	No	10	10	10	10

Solar Radiation Storms - (High Energy Protons):

Radiation Storms Probability (Exceedance)	Level (cm^{-2} sr^{-1} s^{-1})	Past 24 Hours (Yes/No)	Day 1 (00-24 UTC) (%)	Day 2 (00-24 UTC) (%)	Day 3 (00-24 UTC) (%)	Day 4 (00-24 UTC) (%)
Active	≥ S1	No	10	10	10	10
Very Active	≥ S3 *	No	1	1	1	1
* S3 ≥ 10 MeV ≥ 1000 pfu and / or ≥ 50 MeV ≥ 10 pfu. (pfu = $cm^{-2}sr^{-1}s^{-1}$)						

Issued by Met Office Space Weather Advisor, Tel: +44 (0) 330 135 4254 Email: moswoc@metoffice.gov.uk

© Crown Copyright 2023. All Rights Reserved.